

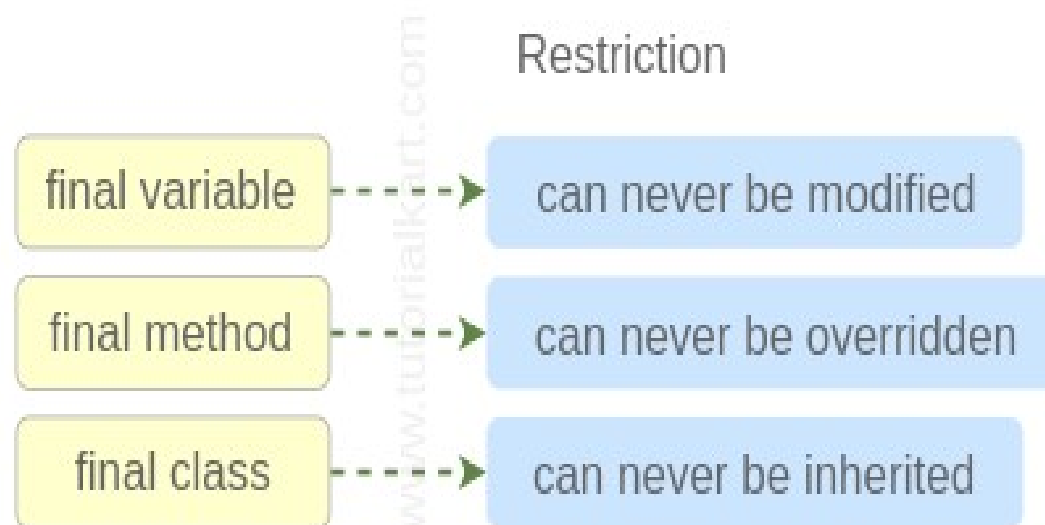
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- **Class:** B.Sc. Computer Science (Entire)- III
- **Course Title:** Java programming

Final keyword

final is a keyword in java. It is used to restrict the user.

final is used along with:

1. Variables
2. Methods
3. Classes



final variable

- The variable declared with the final keyword is said to be the final variable
- Once a variable is declared as final, it can be initialized during declaration or in the constructor. And can never be changed during the course of the program. Hence static final variables are also called constants.
- It can be declared in any one of below three ways-
- **final variable-**
- The value of a final variable cannot be changed once it is initialized.(It will be constant).

e.g `final int VAR1=21;//final variable`

- Prog to display hours in 5 days
- class final1
- {
- final int hours_in_day=24 ;
- System.out.println("hours in 5 days="+hours_in_day*5);
- }
- }
- Output –hours in 5 days = 120

2 blank final variable-

If a final variable is not initialized at the time of declaration, then it must be initialized inside constructor of the class in which it is declared. Such variable is also called a blank final variable.

e.g-final int VAR2; // blank final variable

- blank final static variable-
- if a *static* final variable is not initialized at declaration, then it must be initialized inside static initializer block of the class in which it is declared. Such variable is called a blank final static variable..
- `static final double PK; //blank final static variable`

Final variable

```
class Demo
{
    final int MAX_VALUE=99;
    void myMethod()
    {
        MAX_VALUE=101;
    }
    public static void main(String
        args[])
    {
        Demo obj=new Demo();
        obj.myMethod();
    }
}
```

Output - compile time error

static final variable

```
public class Circle
{
public static final double
    PI=3.14159;
public static void main(String[]
    args)
    {
        System.out.println(PI);
    }
}
```

- **final method**
- If a method is declared as final in Java, then it cannot be overridden by any subclass of the class in which it is declared.


```
class Employee
{
final void disp()
{ System.out.println("Hello
    Good Morning");
}
}

class Developer extends
    Employee
{
void disp()
{
System.out.println("How are
    you ?");
}
}
```

```
class FinalDemo
{
public static void main(String
    args[])
{
Developer obj=new
    Developer();
obj.disp();
}
}
```

Output - compile time error

- **Final Keyword at Class Level**
- It makes a class final, meaning that the class can not be inheriting by other classes. When we want to restrict inheritance then make class as a final.

```
final class Employee
{
  int salary=10000;
}
class Developer extends Employee
{
void show()
{
  System.out.println("Hello Good Morning");
}
}
class FinalDemo
{
public static void main(String args[])
{
  Developer obj=new Developer();
  obj.show();
}
}
```

Output - compile time error

- **Points to Remember:**

- 1) A constructor cannot be declared as final.
- 2) Local final variable must be initializing during declaration.
- 3) All variables declared in an interface are by default final.
- 4) We cannot change the value of a final variable.
- 5) A final method cannot be overridden.
- 6) A final class not be inherited.
- 7) If method parameters are declared final then the value of these parameters cannot be changed.
- 8) It is a good practice to name final variable in all CAPS.
- 9) final, finally and finalize are three different terms. finally is used in exception handling and finalize is a method that is called by JVM during garbage collection.